

## **Chapter Four: The Total Maximum Daily Load Program**

### **I. Introduction**

The Total Maximum Daily Load (TMDL) program is a water quality-based initiative to regulate waters that fail to meet state water quality standards despite the application of technology-based effluent limitations. A TMDL is a calculation of the maximum quantity of a pollutant that can be added to a water body from all sources without exceeding the water quality standard for that pollutant. States or the EPA must establish TMDLs for all pollutants that cause a water body to be listed on the § 303(d) Lists. Once established, the TMDL helps regulators devise the limitations necessary to meet water quality standards by identifying and quantifying both point and nonpoint sources contributing to the problem. The TMDL program is outlined in the CWA and implemented through EPA regulations and guidance documents (see Figure One).

**Figure One: Regulatory Framework and Guidance for the TMDL Program**

<b>Statute</b>	CWA §§ 301-308
<b>Regulations</b>	40 CFR Parts 130-131
<b>Policy/Program Documents</b>  <i>see website:</i> <a href="http://www.epa.gov/owow/tmdl/policy.html">http://www.epa.gov/owow/tmdl/policy.html</a>	<ul style="list-style-type: none"><li>• Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to §§ 303(d) and 305(b) of the Clean Water Act, TMDL (2003).</li><li>• Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements (2002).</li><li>• New Policies for Establishing and Implementing TMDLs (1997).</li></ul>
<b>Technical Guidance Documents</b>  <i>see website:</i> <a href="http://www.epa.gov/owow/tmdl/techsupp.html">http://www.epa.gov/owow/tmdl/techsupp.html</a>	<ul style="list-style-type: none"><li>• How Research Can Improve the TMDL Program (2002).</li><li>• TMDL Protocols (sediment, pathogens, and nutrients)</li><li>• Allocating Loads and Waste Loads</li><li>• Compendium of Models, Tools Inventory, etc.</li></ul>

The TMDL program has achieved mixed results since its inception in 1972. The nonpoint source aspects of the program were largely ignored by both the EPA and the states until the 1990s when citizen groups began winning court orders and consent decrees requiring the establishment of TMDLs for impaired water bodies. Citizen groups have filed more than 40 lawsuits in 38 states for failure to address nonpoint source TMDL requirements.<sup>1</sup> Of the lawsuits tried or settled, over 20 have resulted in consent decrees requiring states to develop TMDLs or requiring the EPA to develop them if states fail to do so under timeframes ranging from 8-13 years.<sup>2</sup> In 1996, in response to these types of legal challenges and the growing attention to TMDLs, the EPA reviewed the TMDL program. In July of 2000, the agency promulgated new regulations intended to strengthen the program and give additional strength to the control of nonpoint sources. However, these new regulations generated enough controversy that Congress blocked their implementation, and in 2003 the rule was withdrawn.

## **II. What is a TMDL?**

A TMDL is a calculation of the maximum quantity of a pollutant that may be added to a water body from all sources, including point sources, nonpoint sources, and natural background sources, without exceeding the applicable water quality criteria for that pollutant.<sup>3</sup> Although § 303(d) refers to “daily” load, EPA regulations allow TMDLs to be expressed “in terms of either mass per time, toxicity, or other appropriate measures.”<sup>4</sup> The TMDL must allow a margin of

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<sup>1</sup> Copeland, Claudia. Clean Water Issues in the 107<sup>th</sup> Congress. Congressional Research Services. Jan. 9, 2003.

<sup>2</sup> *Id.*

<sup>3</sup> 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. sec 30.2(e)-(i).

<sup>4</sup> 40 C.F.R. § 130.2(i).

safety to account for scientific uncertainty, and it must take into consideration seasonal variations in water quality conditions.<sup>5</sup>

A TMDL has three components: a Wasteload Allocation (WLA), a Load Allocation (LA), and a margin of safety.<sup>6</sup> The WLA is the portion of a TMDL allocated to existing and future point sources, where as the LA is the portion attributed to existing and future nonpoint sources, including natural background levels of the pollutant. Where possible, the LA must distinguish between loadings from natural sources and those from nonpoint sources. A simple formula summarizes the components of a TMDL:

$$\text{WLA} + \text{LA} + \text{margin of safety} = \text{TMDL}$$

### **III. Establishing and Apportioning TMDLs**

States are required to identify, rank, and list on the 303(d) Lists water bodies that do not meet state water quality standards despite compliance with NPDES permits. After the identification and ranking of impaired waterbodies, the states must prepare TMDLs for each individual pollutant impairing each listed water body.<sup>7</sup> States then submit their 303(d) inventories and associated TMDLs to the EPA for approval. If a state's submittal is not approved, the EPA must prepare its own list and/or TMDL for the state's waters.<sup>8</sup> Once a TMDL is approved or prepared by the EPA, states are required to incorporate it into their continuing planning processes and their water quality management plans.<sup>9</sup>

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<sup>5</sup> 40 C.F.R. § 130.7(c)(1).

<sup>6</sup> 40 C.F.R. § 130.2(g) and (h).

<sup>7</sup> 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1).

<sup>8</sup> 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(1)-(2).

<sup>9</sup> 33 U.S.C. § 131(e)(3)(C); 40 C.F.R. § 130.5-6, 130.7(d)(2).

## A. Establishing

CWA § 303(d) requires TMDLs to be prepared for all waters which do not meet water quality standards. However, EPA regulations require states to prepare TMDLs for all waters not “expected” to meet water quality standards.<sup>10</sup> Under this guidance, some states decided that below-standard waters did not need TMDLs because other kinds of activities were planned or underway to restore them. The specific language of the statute does not provide the grace of exempting below-standard water because of the expected effects of other abatement programs, but to the states, this approach represented a reasonable use of limited resources.<sup>11</sup> In 1997, the EPA issued guidance on this issue saying that waters could be exempted from the TMDL requirement as “expected to meet” water quality standards only if those expectations were to be met in the next two years.<sup>12</sup> The heart of this guidance document was an appendix which listed and summarily dismissed excuses, difficulties, and objections to the listing of impaired waters and the preparation of TMDLs.

The CWA is unclear on *when* states are required to establish TMDLs. The CWA directs the states to submit to the EPA their initial 303(d) Lists and TMDLs 180 days after the EPA initially identifies pollutants suitable for TMDL calculation.<sup>13</sup> The statute further requires states to make additional TMDL submittals “from time to time.”<sup>14</sup> EPA regulations have clarified “from time to time” pertaining to the submittal of 303(d) Lists to mean every two years.<sup>15</sup> However, the EPA has not established a time frame for the submittal of TMDLs. Therefore,

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<sup>10</sup> 40 C.F.R. § 131.3(h).

<sup>11</sup> Houck, Oliver A. *The Clean Water Act TMDL program : law, policy, and implementation*. Washington, D.C.: Environmental Law Institute, 2002. p. 58.

<sup>12</sup> Wayland, Robert H. III. *National Clarifying Guidance For 1998 State and Territory Section 303(d) Listing Decisions*. August 17, 1997. Available at: <http://www.epa.gov/owow/tmdl/lisgid.html>.

<sup>13</sup> 33 U.S.C. § 1314(a)(2)(D). The CWA directed the EPA to publish a list of pollutants suitable for TMDL calculation by October 18, 1972.

<sup>14</sup> 33 U.S.C. § 1313(d)(2).

<sup>15</sup> 40 C.F.R. § 130.7(d)(1).

although states must identify the TMDLs they intend to prepare within two years, they are not expressly required to submit them at any particular time (unless they are subject to one of the previously mentioned consent decrees).

Most states have lacked the resources to do TMDL analyses which involve complex assessments of point and nonpoint sources and mathematical modeling. The EPA has both been reluctant to override states and has lacked the resources to do the analyses themselves.<sup>16</sup>

However, in 1984, the Seventh Circuit found in *Scott v. City of Hammond* that a lack of action by either the state or the EPA cannot continue indefinitely.<sup>17</sup> The court held that a failure by a state to submit a TMDL to the EPA over a long period of time constituted a “constructive submission” of no TMDL.<sup>18</sup> The EPA then has the nondiscretionary duty to approve or disapprove the state action of no TMDL. This “constructive submission” theory has been used to determine when a state’s failure to act amounts to a decision not to submit TMDLs, thus triggering the EPA’s duty to act.

The EPA often takes the lead in establishing TMDLs for waterbodies that involve multiple states. If water quality standards differ between the states, the TMDL must meet the most stringent standard. In practice, the downstream state can use an established TMDL to enforce its water quality standard rather than being forced to file suit in the upstream state’s court.<sup>19</sup>

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<sup>16</sup> Copeland, Claudia. Clean Water Quality: Implementing the Clean Water Act. Congressional Research Services. Aug. 27, 2003.

<sup>17</sup> *William J. Scott v. City of Hammond, Indiana*, 741 F.2d 992 (7<sup>th</sup> Cir. 1984).

<sup>18</sup> *Id.*

<sup>19</sup> Ryan, Mark, editor. The Clean Water Act handbook. Chicago : Section of Environment, Energy, and Resources, American Bar Association, c2003. p. 210.

## **B. Apportioning**

States have considerable discretion over the allocation of a waterbody's loading capacity among various sources. Neither the CWA nor EPA regulations specifically guide states on the apportioning of TMDLs. States are not required to divide TMDLs equally or in proportion to the load contributions from point and nonpoint sources, and states may take a variety of factors into consideration, including costs to point and nonpoint sources, the effectiveness of various controls, the probability that controls will be implemented, and the social and economic benefits of different allocations.<sup>20</sup> Current regulations give states further flexibility by specifically allowing tradeoffs between point and nonpoint sources.<sup>21</sup> These regulations were established so that where BMPs or other nonpoint source controls are available to reduce loading from nonpoint sources, a state may make more loading capacity available to point sources. However, states are still constrained by the CWA's antibacksliding provisions which may limit the state's ability to increase loading from particular point sources (see Chapter 2).

## **IV. Implementation of TMDLs**

CWA § 303(d) addresses the substance of and process for creating TMDLs, but the CWA contains little on the actual implementation of this program. Section 303(e) requires states to have an EPA-approved continuing planning process (CPP) and water quality management plans which include 303(d) TMDLs.<sup>22</sup> While § 303(e) authorizes the EPA to approve or disapprove CPPs on the basis of TMDLs, it does not authorize the EPA to implement them. Observers have asked, "Does all the work of TMDLs and their load allocations wind up as references in state plans, implemented if and as the state may wish, or does the TMDL itself have to include the

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<sup>20</sup> *Id.* at p. 208.

<sup>21</sup> 40 C.F.R. § 130.2(i).

<sup>22</sup> 33 U.S.C. § 1313(e).

means of its own implementation in order to receive [the] EPA’s approval?”<sup>23</sup> The EPA’s authority to review and reject TMDLs is one mechanism that may be used to ensure TMDL implementation.<sup>24</sup> As discussed below, other provisions in the CWA can also provide implementation mechanisms for TMDLs.

### **A. Implementation on Point Sources**

Section 301 requires NPDES permits to include any limitation necessary to meet state water quality standards.<sup>25</sup> EPA regulations have interpreted this to mean that for waters with established TMDLs, point source discharges must be consistent with the waste load allocation (WLA) in the TMDL and this must be reflected in the NPDES permit.<sup>26</sup> New or increased discharges from point sources are permitted only if the TMDL incorporates them through specific WLAs or through unallocated capacity.<sup>27</sup> Therefore, implementation of TMDLs on point sources is relatively straight-forward.

### **B. Implementation on Nonpoint Sources**

How TMDLs are to be implemented on nonpoint sources is still an unanswered question. Section 303(d) of the CWA requires TMDLs for all waters for which “effluent limitations ... are not stringent enough to implement any water quality standards,” but the section does not expressly reference nonpoint sources.<sup>28</sup> The EPA has interpreted the TMDL program as applying to all impaired waters regardless of the source of impairment.<sup>29</sup> However, in 2002, the

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<sup>23</sup> Houck, *supra* note 11 at p. 60.

<sup>24</sup> The EPA can require implementation provisions to be included in a TMDL in order to receive agency approval.

<sup>25</sup> 33 U.S.C. § 1311(b)(1)(C).

<sup>26</sup> 40 C.F.R. §§ 122.44(d)(1)(vii)(B), 130.12(a).

<sup>27</sup> 40 C.F.R. § 122.4(i)(1).

<sup>28</sup> 33 U.S.C. § 1313(a)(1)(A).

<sup>29</sup> 40 C.F.R. § 130.2(g)-(i).

EPA's authority to require TMDLs for waters impaired solely by nonpoint sources was challenged.<sup>30</sup> The Ninth Circuit upheld the EPA's interpretation and found that although point and nonpoint sources are treated differently in many sections of the CWA, § 303(d) applies regardless of the source of pollution. However, the court did not go so far as to give the EPA the authority to implement nonpoint source controls. The court noted that the structure of the CWA calls for effluent limits on point sources which can be tightened due to TMDLs. For nonpoint sources, the CWA requires a planning process, not direct federal regulation (see Chapter Five). Therefore, EPA does not have the authority to directly regulate nonpoint sources, and implementation of LAs in the TMDL is left to the discretion of the state.

TMDL implementation on nonpoint point sources appears to be as follows. If water quality standards are not met, states are required by Federal law to prepare TMDLs. Once the Federal requirement of preparing a TMDL and apportioning WLA to point sources is met, the state can decide whether or not and how to implement LA on nonpoint sources. The EPA does not have the authority to require nonpoint source controls, but it can provide incentives, and states must implement TMDLs only to the extent that they seek to avoid losing Federal grant money.<sup>31</sup>

### **C. Implementation on Federal Land**

Section 401 of the CWA requires that any applicant for a Federal license or permit to conduct any activity which may result in any discharge of a pollutant to navigable waters must

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<sup>30</sup> *Pronsolino v. Nastri*, 291 F.3d 1123 (9<sup>th</sup> Cir. 2002). The EPA had prepared a sediment TMDL for the state of California, which the state implemented through restrictions on timber harvesting. The plaintiffs argued the EPA had exceeded its CWA authority and intruded into the state's traditional control over land use.

<sup>31</sup> *Id.* The monies that typically are lost are § 319 grants. These grants are awarded to the state for implementing nonpoint source pollution control, but can be withheld should a state not identify methods for implementing TMDLs on nonpoint sources.



obtain a certification from the state in which the discharge originates.<sup>32</sup> This certification must include effluent limits on point sources<sup>33</sup> and can include other limitations necessary to achieve water quality standards and other requirements of state law.<sup>34</sup> Therefore, the WLA components of a TMDL could be implemented as part of the 401 certification requirement. Aspects of § 401 certification will be discussed in greater detail in Chapter Five.

## **V. Revising the TMDL Program**

In recent years, national and local environmental groups have filed numerous lawsuits against the EPA and states for failure to fulfill requirements of the TMDL program. Many of these suits have resulted in court orders for the EPA to develop TMDLs expeditiously (see Figure Two). EPA and state officials are concerned about diverting resources from other high-priority water quality activities in order to meet these court orders.<sup>35</sup> In 1996, the EPA created an advisory committee to solicit advice on the problems with the TMDL program, and these recommendations formed the basis of a July 2000 TMDL rule.

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<sup>32</sup> 33 U.S.C. § 1341(a)(1).

<sup>33</sup> 33 U.S.C. § 1341(d).

<sup>34</sup> 40 C.F.R. § 121.2(a)(3).

<sup>35</sup> Copeland, *supra* note 16.

**Figure Two: TMDL Litigation by State**

EPA is under court order to establish TMDLs if state does not	<i>Alaska: 1999</i> <i>California: LA 1999; North Coast 1997; Newport Bay 1997</i> <i>Montana: 2000</i> <i>New Mexico: 1997</i> <i>Oregon: 2000</i>
Plaintiffs have filed litigation seeking to compel EPA to establish TMDLs	<i>California</i> <i>Idaho</i> <i>Nevada</i> <i>Wyoming</i>
Notice of intent to sue has been filed seeking court orders for EPA to establish TMDLs	<i>Arizona</i>
Cases dismissed without orders that EPA establish TMDLs (some cases were resolved with settlement agreements)	<i>Arizona – EPA completed all consent decree obligations; decree terminated July 17, 2000</i> <i>Colorado – Joint motion for administrative closure files Aug. 24, 1999; parties signed settlement agreement in which EPA agreed to establish TMDLs if the state did not</i> <i>Idaho – EPA motion to dismiss granted in 1997</i>

Source: Houck, Oliver A. The Clean Water Act TMDL program : law, policy, and implementation. Washington, D.C.: Environmental Law Institute, 2002. p. 283.

The 2000 rule began by redefining the definition of TMDL. Rather than the sum of WLAs and LAs with a margin of safety, TMDL was defined as “a written, quantitative plan and analysis,” composed of 11 specific elements, for meeting water quality standards.<sup>36</sup> One controversial element was the requirement that states prepare comprehensive implementation plans providing “reasonable assurance” that the WLAs and LAs in a TMDL would actually be implemented. The new rule also contained other provisions such as enlarging the scope of § 303(d), requiring states to submit comprehensive schedules for the completion of TMDLs, and specifically mentioning the control of nonpoint sources as a means to meet water quality standards.<sup>37</sup>

The rule was highly controversial because of the additional requirements placed on states and because of the potential impacts on sections of the agriculture and forest industries which

<sup>36</sup> Ryan, *supra* note 19 at p. 218.

<sup>37</sup> Lacy, Peter. Addressing Water Pollution from Livestock Grazing After ONDA v. Dombeck: Legal Strategies Under the Clean Water Act. 30 Env't. L. 617. Summer, 2000.

currently are not subject to CWA regulations.<sup>38</sup> Responding to this opposition, Congress included a provision in an FY 2001 appropriation bill preventing the EPA from spending any funds to finalize or implement the new TMDL rule. On March 19, 2003, the EPA withdrew the 2000 TMDL rule. EPA is reportedly considering initiating an entirely new rule, but no specific plans have been announced. States, municipalities, and industries have urged the EPA to develop a new rule with greater flexibility in implementation and enforcement. The EPA considers a new rule to be preferable, but not essential, as it sees states as continuing to improve the pace of TMDLs.<sup>39</sup> Environmental groups say that short of retaining the 2000 rule, the best action would be to leave the current rule in place.<sup>40</sup>

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<sup>38</sup> Copeland, *supra* note 16.

<sup>39</sup> *Id.*

<sup>40</sup> *Id.*